Howard Ford Bridge (Blue Springs Bridge)
Spanning James River on Cart Road 143,
3.0 miles north and 2.95 miles west of
Nixa, 0.21 miles south of the Christian-Greene
County line
Nixa vicinity
Christian County
Missouri

HAER No. MO-52

HAER MO, Qa-NIXAN,

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record Rocky Mountain Regional Office National Park Service U.S. Department of the Interior P.O. Box 25287 Denver, Colorado 80225

HAER MO, 22-NIXA.V,

HISTORIC AMERICAN ENGINEERING RECORD

Howard Ford Bridge (Blue Springs Bridge)

HAER No. MO-52

Location:

Spanning James River on Cart Road 143, 3.0 miles north and 2.95 miles west of

Nixa, 0.21 miles south of the Christian-Greene County line

Nixa vicinity, Christian County, Missouri

UTM: Eastern End - 15.468280E.4104920N

Western End - 15.468210E.4104920N

Quad: Nixa

Date of Construction:

1920-1921

Builder:

Pioneer Construction Company, Kansas City, Missouri

Present Owner:

Christian County

Christian County Courthouse

Ozark, Missouri

Present Use:

Vehicular bridge (to be replaced by a new vehicular bridge).

Projected date of removal: Summer 1990

Significance:

One of the longest examples of a single span Pratt through truss bridge in the State

of Missouri.

Historian:

Kerry C. McGrath

Center for Archaeological Research Southwest Missouri State University

Date:

October 1989

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I. HISTORY

A. Christian County, 1880-1920

As Christian County entered the twentieth century, increasing numbers of county residents were drawn into an emergent market-oriented, cash-based economy. Almost depopulated after the Civil War, returning families and emigrants swelled the population to 16,939 in 1900, a density of 30.6 persons per mile. [1] Less than a tenth of the county's acreage had been cleared for cultivation in 1870, whereas by 1900 this figure had risen to 73%. [2] Two railroads, built between 1871 and 1883, now served the county. [3] With accessible shipping points, Christian County's predominantly rural population started to produce for regional and national markets. By 1900, there were commercial orchards and dairy farms in the western part of the county. General farming, with an emphasis on livestock production and truck gardens (strawberries and tomatoes), were becoming widespread. [4]

Although agriculture continued to be the primary source of income for the county, diversification had occurred with the establishment of mining operations (ca. 1880-1919) in the vicinity of Ozark. [5] Continuing railroad construction and settlement in southwestern Missouri had created a demand for railroad ties, lumber, and cordwood. By the 1880s, two firms were cutting timber in the sparsely populated southeastern part of the county. The ensuing lumber boom, which lasted through the first two decades of the twentieth century, created jobs and brought additional cash income to the county. [6]

Until 1907, the flourishing "Arkansas Trade" provided additional opportunities for commercial development. Initially, this commerce involved the city of Springfield in adjoining Greene County and its southern hinterland which extended into northwestern Arkansas. Cotton, livestock, and other products were brought north for marketing along overland routes that crossed Christian County, while finished goods were sent south. [7] Much of the livestock trade was diverted to Christian County when stock pens and loading docks were constructed at Ozark, Sparta, and Chadwick (shipping points along the Chadwick branch of the Springfield and Southern Railroad). [8] In addition, local entrepreneurs established stores and other facilities (smithys, bunkhouses) along the route to service the trade. [9]

The cultural landscape of Christian County (circa 1900) reflected these developments. The three major towns in the county (Ozark, Billings, Sparta) boasted a variety of retail and service businesses, as well as agriculturally-based industries (flour mills, grain elevators, canneries, creameries, and stock yards). [101] The towns also served as distribution centers for the many smaller villages and hamlets that dotted the landscape and provided local markets for surrounding farms. [11]

These economic developments intensified during the early twentieth century. Although there was a moderate decline in the county's population and the number of farms between 1900 and 1920, the amount of farm acreage increased (Table 1), possible due to enclosure as well as conversion of cut-over timber land. [12] Production increased significantly, especially in grain, livestock, and vegetables (Table 1). A regional poultry industry was then established. [13]

TABLE 1 [14]

	1900	1910	1920
Population	16,939	15,832	15,252
Number of Farms	2,648	2,551	2,585
Farm Acreage	258,208	259,226	266,714
Cereals (value)	\$881,930*	\$912,439	\$2,315,415
Livestock (value)	\$782,577	\$1,801,144	\$2,817,551
Vegetables (value)	\$34,835*	\$83,993	\$248,985
Pruits and Nuts (value)	**	\$66,627	\$274,091

*1902 crop **Not recorded

During this period, additional canneries, stockyards, grain elevators, and/or loading docks were built at new locations, such as Clever, Nixa, Chadwick, Terrill, Griffin, and Cassidy, to serve the spreading market economy. [15] The roster of towns increased with the growth of Nixa and Clever in the west-central part of the county. [16] The shift away from barter and greater involvement in a cash economy can also be charted by the growth of banking. Apparently, Christian County had no banks prior to 1889. By 1899, there were four banks in the county, located in the three towns (Ozark, Sparta, Billings). Between 1900 and 1920, seven more banks were chartered, four of which were in new locations: Nixa, Chadwick, Clever, and Highlandville. [17]

Railroad construction between 1904 and 1907 affected the pattern of regional commercial traffic. The Springfield Southwestern Railroad went from the city of Springfield in Greene County to Crane in Stone County, and passed through the western part of Christian County. Now equipped with rail service, Clever was soon competing with Billings for regional trade. [18] The railroad camp at Terrill had become a private stockyard and shipping point. [19] Moreover, small towns developed along the line in southern Greene County, providing alternative trade and shipping points for those living in north-central Christian County. [20] At the same time, another railroad (White River Division of the St. Louis, Iron Mountain, and Southern Railroad) was constructed through northern Arkansas and southwestern Missouri. By 1908, an alternative to overland freighting and livestock drives was available to those living south of Christian County. [21]

Although Christian County expanded the network of county roads during the late nineteenth century, little attention was paid to bridge building. Only two bridges were erected and maintained. Both were wooden structures, placed at strategic locations. The first bridge (1864-1865) crossed the Finley River at Ozark, the county seat, and lay on the freight route from Forsyth to Springfield. [22] The

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other bridge (1884) crossed the James River and was located on the county's only east-west thoroughfare which connected Ozark with Billings and Mount Vernon in Lawrence County. [23]

The frequency of repair and replacement of these wooden bridges attested to many episodes of high water and flooding so characteristic of Ozark streams and rivers. [24] At the turn of the century, Christian County had developed commercial agriculture, local markets, and was attracting regional trade. Fords were no longer sufficient because commerce would be continually and unpredictably interrupted by floods. [25] In addition, rural mail delivery began in Christian County circa 1906, and this was the period when rural public school districts were formed, [26] both required a dependable transportation system. Thus, in 1904, the county embarked on a program of bridge construction involving erection of substantial metal structures.

The first four metal bridges were placed on primary thoroughfares. The wooden bridge across the James River on the Ozark-Mount Vernon Road had washed away; so, in 1904, the county contracted with J. W. Hoover, General Agent of the Canton Bridge Company, for construction of its replacement. [27] Two years later, in 1906, the county again contracted with the Canton Bridge Company for construction of metal bridges across the Finley at Riverdale and Linden. [28] These were two of Christian County's oldest hamlets and each contained a substantial mill. Riverdale lay on a north-south freight route, whose traffic sustained several other villages and hamlets (Guinn, Nixa, Highlandville, Montague, Reno). The bridge at Linden was also located on an inter-county road and provided access to Sparta, as well as to smaller stations along the Chadwick line. [29] When the "wagon bridge" across the Finley River at Ozark washed away in 1909, it too was replaced with a metal structure, erected by the Canton Bridge Company. [30]

Subsequent bridges, built between 1912 and 1920, served local traffic. In the southeastern part of the county, cut-over timber land was being converted to farms. The population has increased and stabilized. To accommodate increased traffic in the area, the county bridged Swan Creek at Garrison circa 1912 and Bull Creek at the C. E. Tate's Ford in 1915. [31] Some of the oldest settlements in the county had been within and adjacent to the Finley River valley. By the early twentieth century, these were served by a series of mills and cross-roads communities. The bridges at "Parch Corn Ford" (ca. 1912), "Herbert Hawkins Place" (ca. 1915), and "D. B. Roberts Ford" (ca. 1919) provided access to these, while the "Jenkins Ford Bridge" (1914) lay on the road between Sparta and Rogersville in Webster County. [32]

The James River separated Christian County's western panhandle from the rest of the county. Between 1915 and 1916, fords at "Jeff Frazier's" and "E. E. Frazier's" farms were bridged, facilitating east-west travel through the county and access to the railroad station at Clever. [33] Stock farmers in western Christian County maintained a private stockpen and loading facility at Terrill Station and apparently were instrumental in having the "Terrill Creek" bridge erected in 1920. [34] The "Howard Ford" bridge across the James River eased travel to the railroad shipping point at Battlefield, as well as the city of Springfield, both in Greene County. [35]

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B. Construction Technology

To get the Howard Ford Bridge constructed, area residents, led by George W. Sanders, Joseph W. Sanders, Joel L. Bussard, and Thomas H. Carr, petitioned the Christian County Court for the establishment of the Blue Springs Special Road District. [36] Once the special road district was established on February 2, 1920, and Thomas Carr, Joel Bussard, and Joseph Sanders appointed as commissioner, [37] another petition was submitted. This called for relocation of the east-west county road through the road district, so that it crossed the James River at the proposed bridge site. [38] The court approved the realignment on May 3, 1920, and the groundwork was laid for construction of the bridge. [39]

Formal planning for a bridge across the James River at Howard Ford began in April 1920 when the court directed A. C. Adams, ex-officio highway engineer, to prepare the requisite plans and estimates for bids on the project as well as for construction of the Terrill Creek Bridge. [40] The bidding was advertised on May 28, 1920, with the letting scheduled for June 7, 1920. [41] Both projects were awarded to the lowest bidder, the Pioneer Construction Company of Kansas City, Missouri. [42]

The contract for the Howard Ford Bridge, executed by Ed W. Appleby, vice president of the company, and A. C. Adams, representing Christian County, called for construction of a single 157-foot steel span, as well as one 36-foot approach span, which would rest on concrete piers. [43] The cost would be \$9,917, with payment by installment - \$2,500, when the concrete foundations were completed;\$5,500, when the metal was delivered at Battlefield; and the balance upon completion of the work. The bridge was to be built within 300 working days. [44]

The Pioneer Construction presented their bond of \$13,500 for the two construction projects on June 21, 1920. [45] Neither the court records nor contemporary newspaper accounts provide clear documentation as to the progress of construction. Based on the payment schedules in the contracts for the two bridge projects and issuance of warrants to the Pioneer Construction Company, the Terrill Creek Bridge apparently was built first during the fall of 1920. [46]

Construction of the James River Bridge at Howard Ford was underway by November 1920. However, the contractor had found the original plans inadequate for site requirements and made some modifications which the court found unacceptable. By December, the disagreement was resolved and a second contract was executed, which called for construction of four additional approach spans and steel instead of concrete piers. Work on the bridge structure seems to have been completed by March 1921. [47]

Construction of the Howard Ford Bridge strained the county treasury, so that several other bridge projects were delayed due to lack of funds. [48] The initial contract cost of \$9,917 far exceeded previous amounts paid by the county for metal bridges. In August 1920, the Christian County Court indicated that Greene County would be approached for a donation to the project. [49] It is not clear if they were successful. The second contract executed in December 1920, suggested that an additional \$4,462 would be charged [50], raising the total cost to \$14,379.

Once built, the Howard Ford Bridge was subject to periodic maintenance and repair. Generally, the court records are not clear as to the nature of the work. However, in 1949, the wooden deck was replaced. [51]

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C. Location

A striking characteristic of the rural district served by the Howard Ford Bridge was its stability. Many of the descendants of the first settlers had remained in the area. [52] Throughout the nineteenth century, members of these founding families had forged a strong social network through intermarriage. thus, although divided physically by the James River and, politically, when Christian County was formed in 1859, this network persisted, reinforced by the fact that these social ties formed the basis for business relationships and political action.

Court records note that the bridge would be located at Howard Ford near Tom Carr's farm. [53] The Howard family had come to the area in the 1830s and played a critical role in establishing the first commercial enterprises in the rural district. Around 1839, Francis C. Howard and Sidney S. Ingram built a grist and saw mill on the James River in Sections 5 and 6 of Township 27 North, Range 22 West, a little over a mile downstream (southwest) from the Howard Ford Bridge. Francis' elder brother, Woodson Howard, operated the area's first distillery at Indian Spring on his farm in Section 29, Township 28 North, Range 22 West (Greene County), ca. . 45 mile northeast of the Howard Ford Bridge. During the 1860s, Woodson served two terms as county judge for Greene County's South District. [54]

Others who played a role in the rural district's development were the Carr, Griffin, Sanders/Saunders, Shelton, Stewart, and Young families. In 1845, Azariah/Elijah Sanders had patented land on the east side of the James River in Section 32 and 33, Township 28 North, Range 22 West. [55] John Griffin apparently purchased and operated the Howard Mill until the 1870s. His son-in-law, Thomas H. Carr, lived on the west side of the James, just north of the mill in Section 31, Township 28 North, Range 22 West. [56] Peter Shelton, a farmer and livestock trader, came in the 1840s and settled close to the mill. [57] In the 1850s, the Stewarts (Clayburn and Timothy) had patented and purchased land to the north (Greene County) in Sections 20 and 29, Township 28 North, Range 22 West, while James Young, a carpenter, whose son, Daniel, married one of Peter Shelton's daughters, was living in Section 30 of the same township. [58]

Until 1907, the local trade and service center for north-central Christian and south-central Greene counties was the small village of Griffin, located in Sections 5 and 6 of Township 27 North, Range 22 West. Named after John Griffin, the hamlet had developed around the mill. The first post office and polling place in the township were located in a store at Griffin, operated by James Young. While never large, Griffin provided a local market for area stockmen and farmers, as suggested by the extant businesses circa 1900. These included a general store, flour mill, dry goods store, carpenter, blacksmith, distillery and a livestock company, run by Clayburn Stewart. Mail was received daily from the nearest shipping point at Republic, some six miles to the northwest in Greene County. [59]

By the turn of the century, the ford across the James River at Blue Springs was associated with the Howard family. Woodson's sons, Henry and Allen W., had acquired their father's property. Henry expanded his holdings, so that his farm contained acreage on both sides of the river and included the ford. During the late nineteenth century, Henry had been active in Christian County government, serving as a grand and trial juror, as Justice of the Peace for the Township, and for two terms as Western District Judge on the County Court. His cousin, Andrew Jackson, Francis C.'s son, also achieved local prominence as the majority stockholder and cashier of the Bank of Billings. [60]

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At the same time, the Stewart family was expanding their commercial ventures beyond farming and stock growing. By 1904, Clayburn Stewart and his son, Ed J., had amassed 479.5 acres to the north in Sections 20, 29, and 30 of Township 28 North, Range 22 West (Greene County). A tomato canning factory was operated on Ed J. Stewart's land between 1903-1905. When it was learned that the railroad planned to build a depot and stockyard on Stewart land in Section 20, Ed J. and his wife, Betty (Daniel Young's granddaughter), filed a plat in 1906 for a 40-acre town at the site of the proposed depot. [61]

When the railroad was completed in 1907, the new town of Battlefield (Greene County) boasted seven businesses. In addition to the stockyard, these included: Mikesell and Young, general merchandise (run by descendants of Clayburn Stewart, Peter Shelton and Daniel Young); E. J. Stewart, livery and breeding barn; G. W. Howard, barbershop; and a blacksmith shop. The Eisenmayer Milling Company planned to build a facility in town, and a bank, as well as other businesses, would soon be established. One of the bank's directors was A. M. Howard, Henry's son, who had married one of Peter Shelton's granddaughters. [62]

Although Griffin's decline in the early twentieth century is attributed to the burning of the mill, ca. 1910, it is apparent that the development of Battlefield was a contributing factor. Basic services, such as the post office, were closed and relocated in Battlefield. [63] Some of Griffin's businesses moved as well; for example, the Stewart's livestock business. Moreover, those involved in Battlefield's business community, e.g., the Stewarts, Youngs, and Howards, were drawn from and closely tied to the rural population served by the town. [64] Battlefield, with the advantage conferred by rail service, gained the custom of area residents in both Greene and Christian counties.

The Howard Ford Bridge apparently was constructed to provide access to the new town of Battlefield. Circumstantial evidence suggested that the community network played a pivotal role in the selection of the site as well as influencing the county court to underwrite such a costly project. Descendants of the area's founding families, e.g., George Sanders, Joseph Sanders, and Thomas Carr, had spearheaded the effort to create the Blue Springs Special Road District and the public road to Howard Ford.

The Sanders family had continued to live on the east side of the James River. George Sanders, Elijah's son; his nephew, Joseph Sanders; and son-in-law, Joel Bussard, owned a substantial portion of the property in the special road district. [65] According to the 1910 census, George was living off his own income, while Joseph and Joel are identified as general farmers. [66] By 1920, Thomas Carr may have been living on his father's farm. The Carr family operated a freight and livestock company, involved in the "Arkansas Trade." This may account for Carr's ownership of another 160 acre tract across the James River to the east along one of the freight routes. [67]

Battlefield may also have had representation in the project. Joel Bussard was from Greene County, and his family's farm was situated on the west side of the town. Ed J. Stewart and his brothers owned property in the road, while the Howard family, although not living in the road district, were residing to the north in Greene County and was involved in Battlefield's commercial development. [68] In summary, the Battlefield service area included the Blue Springs Special Road District. Like Carr and members of the Sanders family, Battlefield businessmen had a vested interest in securing a dependable route to town. Jointly, the road district residents and businessmen wielded considerable influence through their varied connections in Christian County, and it is likely that they weighed heavily in the decision to construct a bridge at Howard Ford.

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1I. THE BRIDGE

A. <u>Description</u>

The Howard Ford Bridge is a six span structure, with five 36-foot approach spans on its east side. The main structure is a nine-panel pin-connected Pratt through truss, which is 157 feet in length, 11.2 feet wide (curb to curb), and 18.0 feet high (vertical clearance over deck). Metal rods and eyebars are used for the vertical and diagonal tension members. Rods are used for the top and bottom lateral X-bracing. The vertical compression members at the panel points are laced steel channels. The verticals are made of two 5-inch channels laced on both sides. The top chords and inclined end posts have a steel channel, 7 inches tall on each side, with a continuous steel plate, 14 inches wide by 1/4 inch thick, riveted to the top and lacing 1-1/2 inches wide by 1/4 inch thick, riveted to the bottom at 12 inches on center. The steel channels, used for the top chords and inclined end posts, have the word "ILLINOIS-S USA" stamped periodically along the web.

Tension members include the diagonals, counter diagonals and lower chords. The diagonals consist of two 2-1/2-inch by 58-inch thick at the end panels to 3-1/2 inches wide by 1-inch thick in the center panel. The bridge portals are a pair of continuous steel angles along the top and bottom, with gusset plates at corner and interior connections. The horizontal cross members between the six interior top chord panel points are all tees formed from a pair of steel angles which sandwich a continuous steel plate. The bridge has no metal ornamentation.

The transverse floor beams occur at the eight interior lower chord panel points and are bolted to the pin plates which are bolted to the compression verticals. The transverse floor beams are rolled steel 1-beams, 15 inches tall, with 5-1/2-inch wide flanges. The longitudinal floor stringers are rolled steel 1-beams, 6 inches tall, spaced at 24 inches on centers. The longitudinal floor stringers are bolted to the top flange of the transverse floor beams.

The bridge deck is made of rough sawn, timber planks, approximately 2-1/2 inches thick and 8 to 10 inches wide. They are laid from curb to curb on their broader sides. The deck planks are nailed to the continuous side curbs that are wooden members, 2 inches tall and 4 inches wide, which are bolted to the edge channels at 48 inches on center. There are running boards for each wheel track made of three 2-inch by 12-inch planks, which are nailed to the deck planks. The guard rails along the bridge length are continuous 3-inch by 3-inch by 1-/4-inch steel angles at 18 inches and 38 inches above the deck.

The truss is set upon cast-in-place concrete abutments. The west abutment is keyed into the rock bluff, and the east abutment is a concrete wall pier. At each of the bridge corners, the upper and lower chords meet at a pin connection. Each bearing pin is supported by a bearing plate assembly, which is bolted to the top of the abutments.

The five 36-foot approach spans consist of a timber deck similar to the truss. The longitudinal floor stringers consist of two 15-inch tall rolled 1-beams spaced equally. There are four interior piers, consisting of one concrete pier and three laced channel piers capped transversely, with a horizontal 15-inch rolled steel 1-beam. There is a concrete abutment wall at the extreme east end of the approach spans.

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B. Modifications

Repairs to the Howard Ford Bridge were made in early 1988. They consisted of welding bars to connect the floor beams to the truss verticals. It is at these points that section loss, due to corrosion, and deformation, due to pack rust, are more severe. Also, plates were welded to the 3-inch diameter truss panel point pins, where nuts were missing due to pack rust splitting action.

C. Ownership and the Future

The Howard Ford Bridge has been owned and maintained by Christian County since 1921. The Missouri Highway and Transportation Department has designated this as Bridge No. 143001.0. It also is commonly known as the Blue Spring Bridge.

An appraisal of the bridge revealed that it is structurally deficient and functionally obsolete for carrying modern vehicular traffic. The width of 11 feet provides only one lane, and the posted 6-ton legal load limits the traffic to cars and light trucks. It has suffered collision damage with some of the vertical compression members bent as a result. Most of the metal components show signs of severe rusting, pitting and general deterioration. The concrete abutments are cracking and spalling, and the wooden members are deteriorating. Christian County decided to replace the bridge because of its condition and an inadequate level of service.

The availability of the Howard Ford Bridge will be advertised prior to removal of the structure. Should a party agree to take possession of the bridge, they will be required to transport it to another location and reconstruct it for use in a capacity compatible with its historic nature. Christian County will matchmark, disassemble and prepare the truss for transport. If a responsible party who will take possession of the Howard Ford Bridge cannot be found, it will be demolished at the initiation of the construction of the proposed replacement structure, tentatively scheduled for summer 1990.

III. BIOGRAPHICAL MATERIAL

A. Pioneer Construction Company

This privately-owned, Missouri-based firm was organized in 1918 by Fred R. Hoover, J. J. Vinyard, and Frank A. Boise. Headquartered in Kansas City, the company surveyed, designed and constructed roads, highways and bridges, as well as bought and sold building materials until its liquidation in 1952. The majority stockholder and president during the firm's existence was Fred R. Hoover. [69] Hoover's father, Joseph W. Hoover, had served as general western agent for the Wrought Iron Bridge Company (1884-1900), American Bridge Company (1900-1902), Canton Bridge Company (1902-1909), as well as heading his own firm, the Kansas City Bridge Company (1893-1921). [70] If his record in Greene and Christian counties is representative, J. W. Hoover was an eminently successful engineer and businessmen; for the firms he represented built almost all of the metal bridges erected in the two counties between 1885 and 1920. [71] Fred Hoover apparently obtained his father's "good will", because Pioneer Construction Company became the major contracting firm for both counties during the 1920s. [72] Little is known of the firm's activities outside of Greene and Christian counties, or after 1930. However, the Hoover family formed a construction dynasty, in that Robert M. Hoover, Fred's son, incorporated another Pioneer Construction Company in 1951, which operated until 1961.

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B. Ed W. Appleby

The Canton Bridge and the Pioneer companies' successful contracting records in Greene and Christian counties are also attributable to Ed Appleby. A native of Greene County, associated with a large and prominent family and the son of Albert B. Appleby, a former presiding judge of the Greene County Court (1890-1898), Appleby was familiar with the area and well connected. [74] Rather than follow the traditional family occupations of farming and stock breeding, he chose to enter business. He attended business college in Springfield and worked as a bookkeeper for the Springfield Traction Company. [75] Greene County Court records suggest that Appleby became involved in road and bridge construction during this period. By 1903, he was the Canton Bridge Company's county/contracting agent and worked for J. W. Hoover on bridge projects in the area. [76] Although a self-taught engineer, he is credited with mastering concrete construction, which may account for Greene County's early use of concrete bridges. [77]

Shortly after its formation, Appleby the Pioneer Construction Company as a bridge builder and secretary. His role in securing business for the company is illustrated by events preceding one of Pioneer's first jobs in the area. At the time, Pioneer had bid for the construction of six concrete bridges in Greene County. Their estimate of \$9,604.80 was the second highest of the five submitted. Initially, the contract was awarded to the Republic Concrete Construction, with the low bid of \$9,380.00. However, the county court approved Republic's assignment of the job to Pioneer, which meant bypassing the lower bids of two other firms. [78]

When Appleby bid on the Howard Ford Bridge contract, he was vice president and owned half interest in the company. [79] For the next ten years, Greene and Christian County Court records document his active representation of the firm, so that it became the primary bridge contractor and supplier of materials. [80] He retired to his 500-acre farm in 1929, where he was developing soil conservation techniques. In 1932, Appleby, a Republican, was appointed chairman of the New Deal Federal Farm progrAms, dealing with soil conservation and crop control, a position which he held until his death in 1940. [81]

V. ENDNOTES

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- 2. Christian County Centennial, Inc., Christian County: Its First 100 Years (Jefferson City: Van Hoffman Press, Inc., 1959), 5; William Lane Austin (supervisor), Agriculture, vol. VI, pt.1, Fourteenth Census of the United States, Taken in the Year 1920, (Washington, D.C.: Government Printing Office, 1922), 580.
- 3. Christian County Centennial, Inc., <u>Christian County: Its First 100 Years</u>, 16.
- 4. Ibid., 118-120; Lynn Morrow, "Historical Orientation to Christian County, Missouri", TMs, 1981, Center for Archaeological Research, Southwest Missouri State University, Springfield, 14-15, 18-19; Roy A. Hockensmith, "The State by Counties", The State of Missouri, an Autobiography. ed. Walter Williams (Columbia: E.W. Stephens, 1904), 358-359.
- 5. Christian County Centennial, Inc., <u>Christian County: Its First 100 Years</u>, 31.
- 6. Ibid., 135-136, 144-145; Milton D. Rafferty, <u>The Ozarks Land and Life</u> (Norman: University of Oklahoma Press, 1980), 173-174.
- 7. Kerry C. McGrath, <u>James River Bridge</u>. <u>Photographs</u>. <u>Written Historical and Descriptive Data</u>, Historic American Engineering Record, No. MO-44 (Denver: National Park Service Rocky Mountain Regional Office), 5, 7-8.
- 8. Lynn Morrow, "Historical Orientation to Christian County, Missouri", 18.
- 9. Christian County Centennial, Inc., Christian County: Its First 100 Years, 170-173; Robert E. Cooley et al., The Missouri Township Project: a Cultural Resources Survey and Inventory of Archaeological and Historical Sites, Township 27 North, Range 22 West, Christian County, Missouri, vol. II (Jefferson City:

- cont.
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- Roy A. Hockensmith, "The State by Counties", <u>The State of Missouri</u>, an <u>Autobiography</u>, 358-359; Christian County Centenniai, Inc., <u>Christian County</u>: <u>Its First 100 Years</u>, 24-54, 80-90, 91-105 passim.
- 11. Roy A. Hockensmith, "The State by Counties", <u>The State of Missouri, an Autobiography</u>, 359; Christian County Centennial, Inc., <u>Christian County: Its First 100 Years</u>, 109-110.
- 12. Lynn Morrow and David Quick, "Galena 'Y' Bridge", 7; Milton Rafferty, The Ozarks Land and Life, 184-185, 187.
- Lynn Morrow, "Historical Orientation to Christian County, Missouri", 18.
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